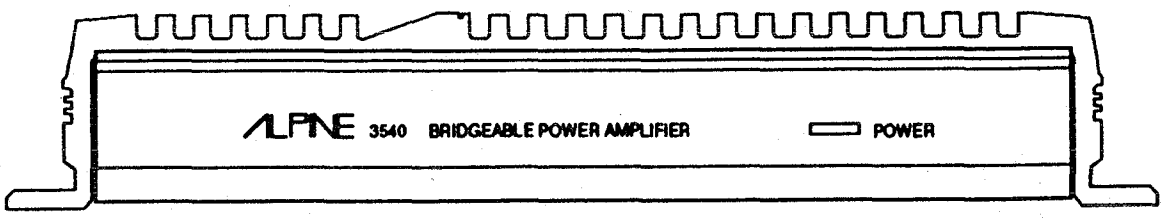
ALPINE SERVICE MANUAL

Bridgeable Power Amplifier



3540

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Specifications

Output Power (10% T.H.D.)
- 4 ohms 2-channel 35W/ch
- 2 ohms 2-channel 40W/ch
- 4 ohms BTL mono mode (1KHz, 0.8% T.H.D.) 80W/ch

Signal to Noise Ratio 100dB
Input Sensitivity ..... 0.5 ± 2dB
Input Impedance ..... 10 ± 2K ohm
Frequency Range ..... 20Hz ~ 40KHz
Current Drain 1A

Power Source ..... 14.4V DC
Semiconductors ..... 5 IC's, 23 Transistors, 9 Diodes, 4 Zener Diodes
Dimensions (W × H × D) ..... 220 × 40 × 130mm
Weight 1.15Kg

NOTE: Due to continuing product improvement, specifications and design are subject to change without notice.

Features

● **SWITCHING MODE POWER SUPPLY:**

The high power output of the 3540 is achieved through the use of a switching mode power source. It provides excellent frequency response characteristics and performance that rivals that of home audio equipment.

● **BRIDGES/STEREO MODE SWITCH:**

Selects stereo or bridged (mono) operation. In the bridged mode, the left and right channels are connected monaurally. The output power in this mode is multiplied and will drive a powerful subwoofer easily.

● **SPEAKER IMPEDANCE:**

4 or 2 ohms (Stereo), 4 ohms (Bridged Mono)

● **REMOTE POWER ON/OFF:**

When you turn the power of your Head Unit on or off, the 3540 turns on and off automatically.

● **RCA INPUT:**

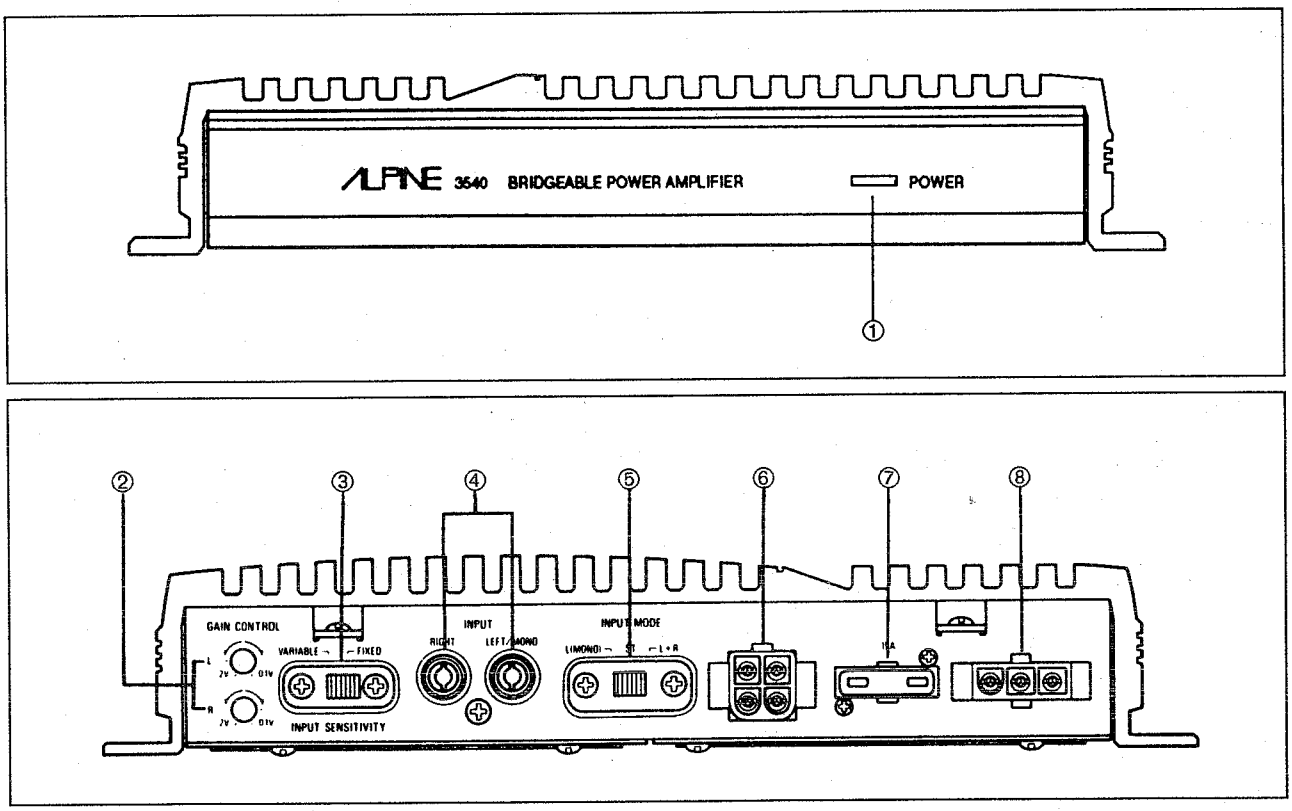
● **INPUT SENSITIVITY:**

RCA JACK (Fixed) : 500mV

(Variable) : 100mV–2V

● **POWER-ON INDICATOR:**

Switches And Terminals



① POWER Indicator

② Input Gain Control

③ Input Sensitivity Selector

④ RCA Input Connectors

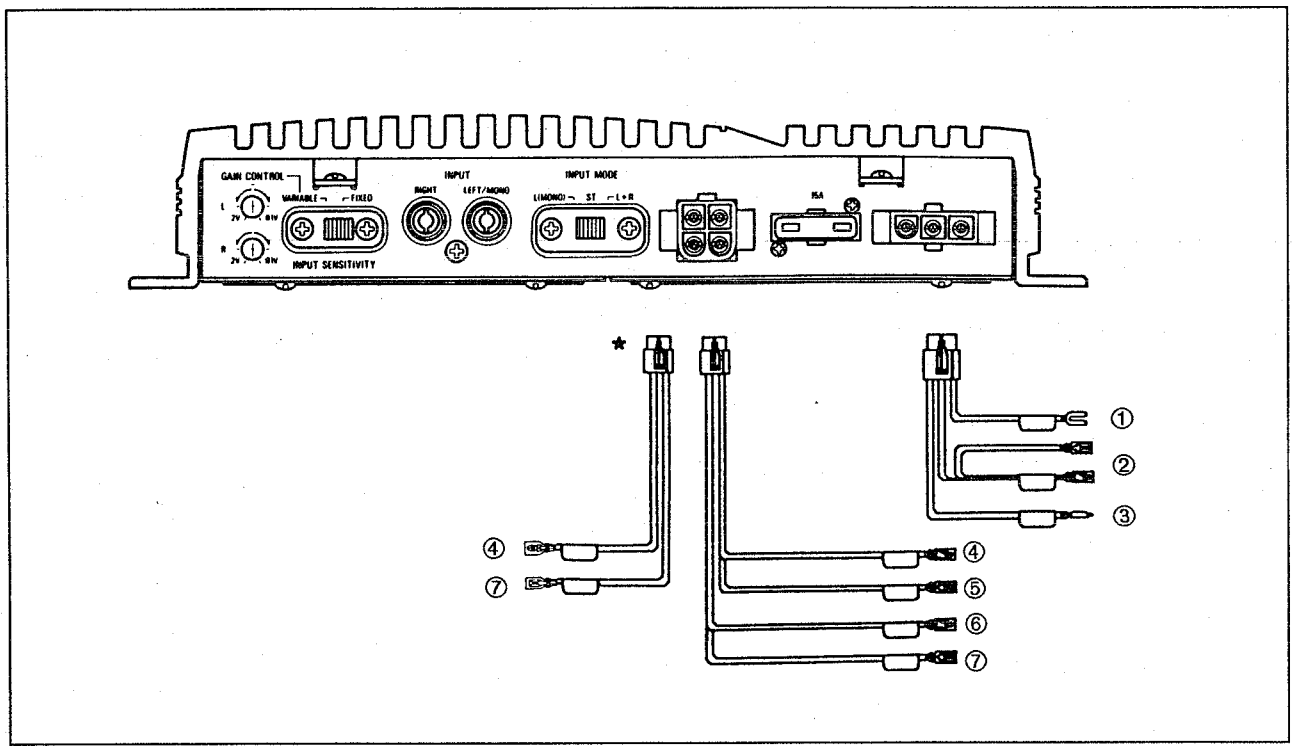
⑤ Input Mode Switch

⑥ Speaker Output Connector

⑦ Fuse

⑧ Power Supply Connector

Connections



① Ground Lead (To metal part of the car chassis) (Black)

② Remote-on Input Lead (Blue/White)

③ Battery Lead (Yellow)

④ Right Speaker Lead (Gray/Black) ⊖

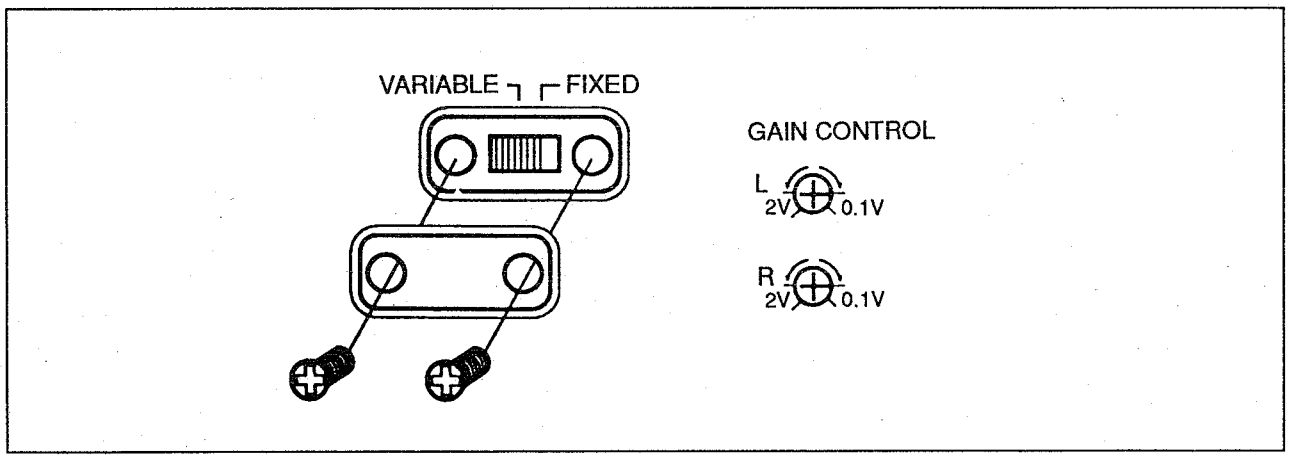
⑤ Right Speaker Lead (Gray) ⊕

⑥ Left Speaker Lead (White/Black) ⊖

⑦ Left Speaker Lead (White) ⊕

* Speaker output connectors for BTL

1. After the 3540 is securely mounted, following the installation steps above, connect the plugs of the head unit to the input jacks of the 3540.
2. Connect the Speakers to the output leads of the 3540.
3. Connect the Remote-On Lead or the Power Antenna Lead (This provides a remote-on signal when the power is turned on.) from the head unit to the Remote On lead of the 3540.



NOTE: If these leads are not connected together, the 3540 will not turn on when the head unit is turned on. If your head unit does not have a power antenna output, a toggle switch (SPST) must be connected between an ignition source (+12V) and the remote-on input lead of the amplifier to provide the turn on signal for the 3540.

4. Secure the ground lead to a clean and bare metal spot.
5. Connect the battery lead directly to the battery terminal.
6. Set the input Selector Switch to the "FIXED" position when connecting with an Alpine head unit or a unit with DIN per amp output. Set the Input Selector Switch to the "VARIABLE" position when connecting with a unit with RCA output other than Alpine head units. Then adjust the Input Gain Control (0.1V–2V) for the maximum sound volume with no clipping distortion.

Operation

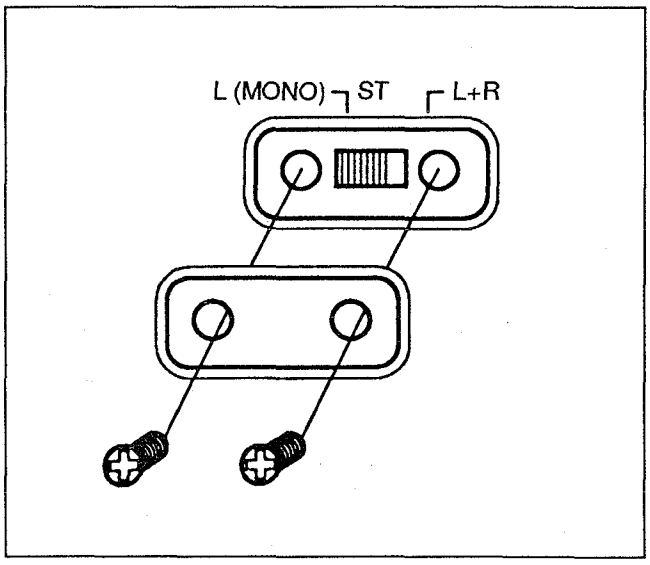
The Alpine 3540 is a high-power, high-efficiency power amplifier designed especially for use with Alpine pre-amp only head units and Bi-Level series, all of which have a pre-out for one snap connection. The 3540 works with another components such as Alpine Equalizers (3312, 3321 etc.) or Alpine Electronic Active Dividing Networks (3652, 3654), none of which has an amplifier of their own. Input gain controls are also provided. For connections, please refer to the illustration above.

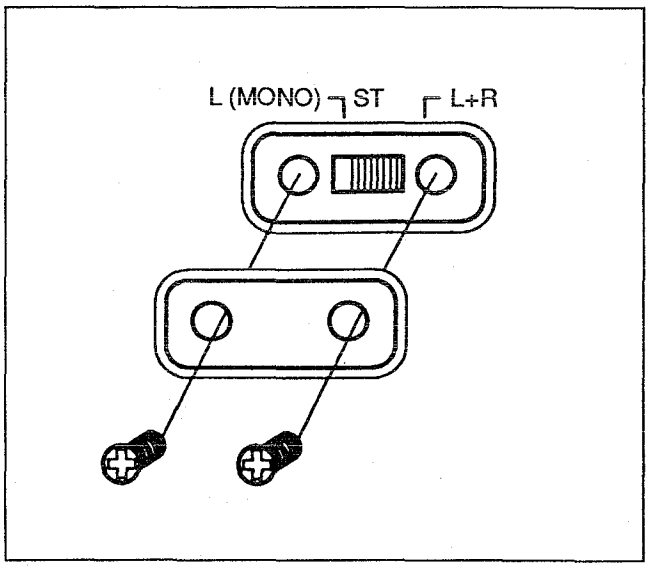
BRIDGING YOUR POWER AMPLIFIER

The 3540 can be used as a bridged single channel amplifier if higher output levels are desired.

To switch to the "L (MONO)" or "L+R" operation, follow the steps below.

1. Connect the supplied speaker output connectors (L ⊕ and R ⊖) for BTL to the speaker leads (⊕ and ⊖).
2. If your wish to drive two bridged amplifiers to produce a stereo image, connect another 3540 in the same manner.
3. Set the 3540's Input Mode Switch to the L (MONO) position. When using two bridged amplifiers for stereo output, set another 3540 in the same manner.





* When using the 3540 for subwoofer output, set the input Mode switch to the "L+R" position.

Precautions

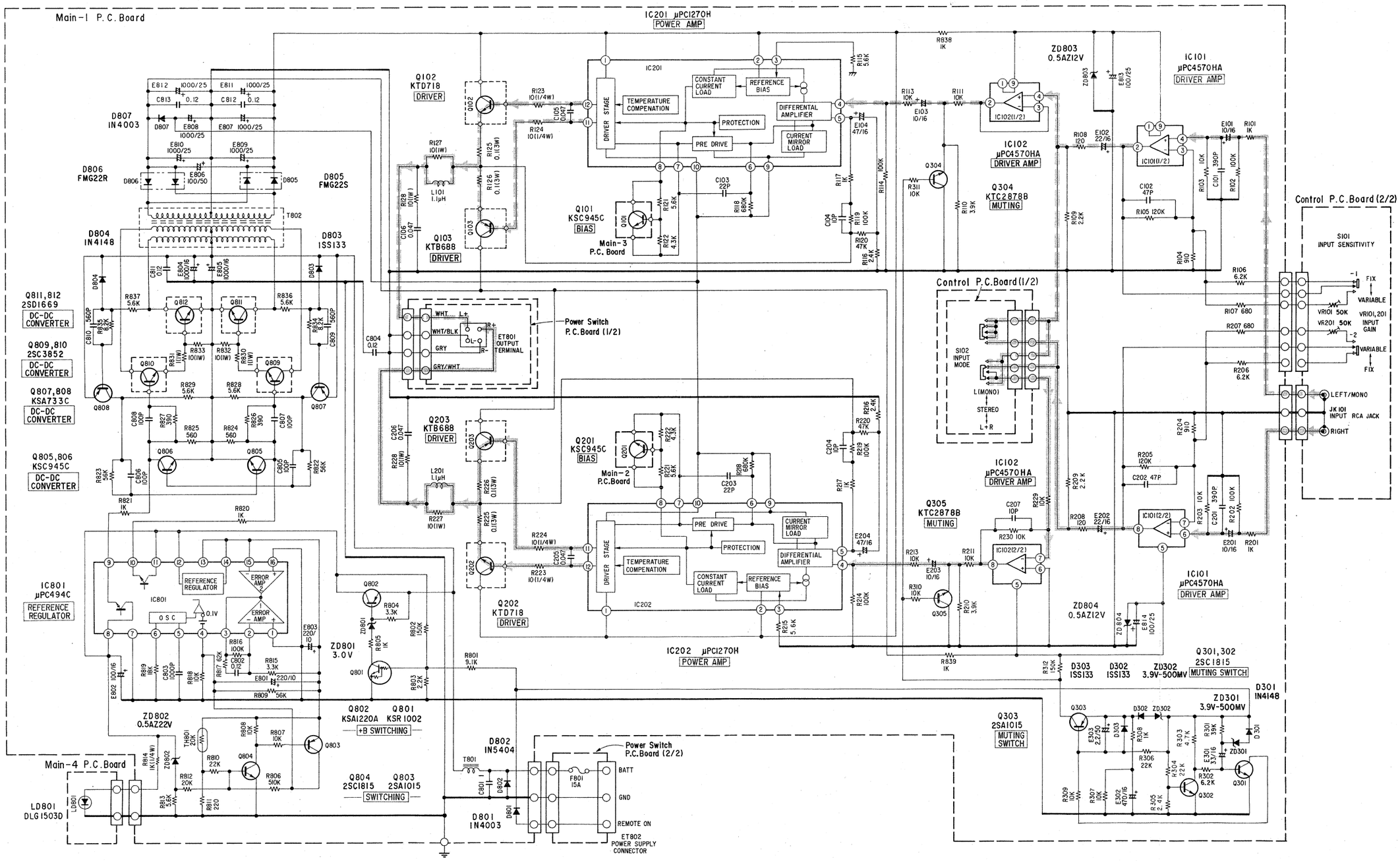
1. Improper wiring connections could cause damage to your unit. Carefully follow the wiring instructions in this manual.
2. The battery lead to the (+) terminal of the battery should be the last connection after all other connections are made.
3. Due to the high power output of the 3540, it is important that all connections are clean and well secured, or damage could result.
4. Be sure that the 3540 is mounted in a way that will allow for free air circulation and heat dissipation.
5. When changing fuses, be sure to replace the old fuse with one of the same amperage. Use of improper fuses can lead to serious damage to components.

Schematic Diagram

(Refer to page 3 for IC's and transistors voltage values.)

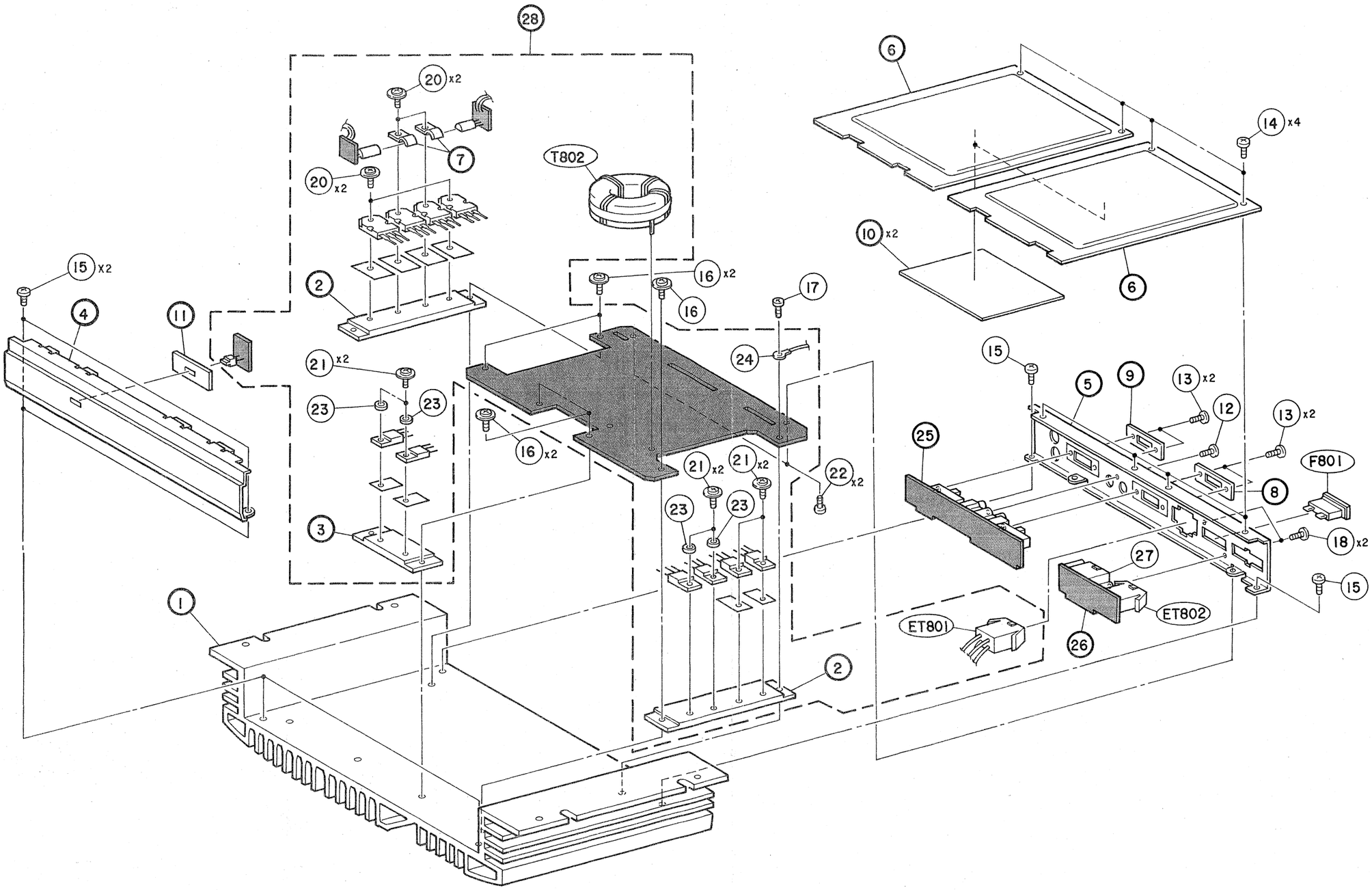
NOTE:
1. All resistance values are in ohms. K= 1,000 M= 1,000,000
2. All capacitance values are in microfarads. P= 1/1,000,000

IC	IC801						IC201 IC202		IC102		IC101		
Transistor (Q)	Q808	Q810 Q812 Q806	Q811 Q805 Q809 Q807 Q804 Q803	Q802 Q801	Q102 Q103 Q203 Q202		Q101 Q201		Q304 Q305		Q303	Q302	Q301



3540	3540

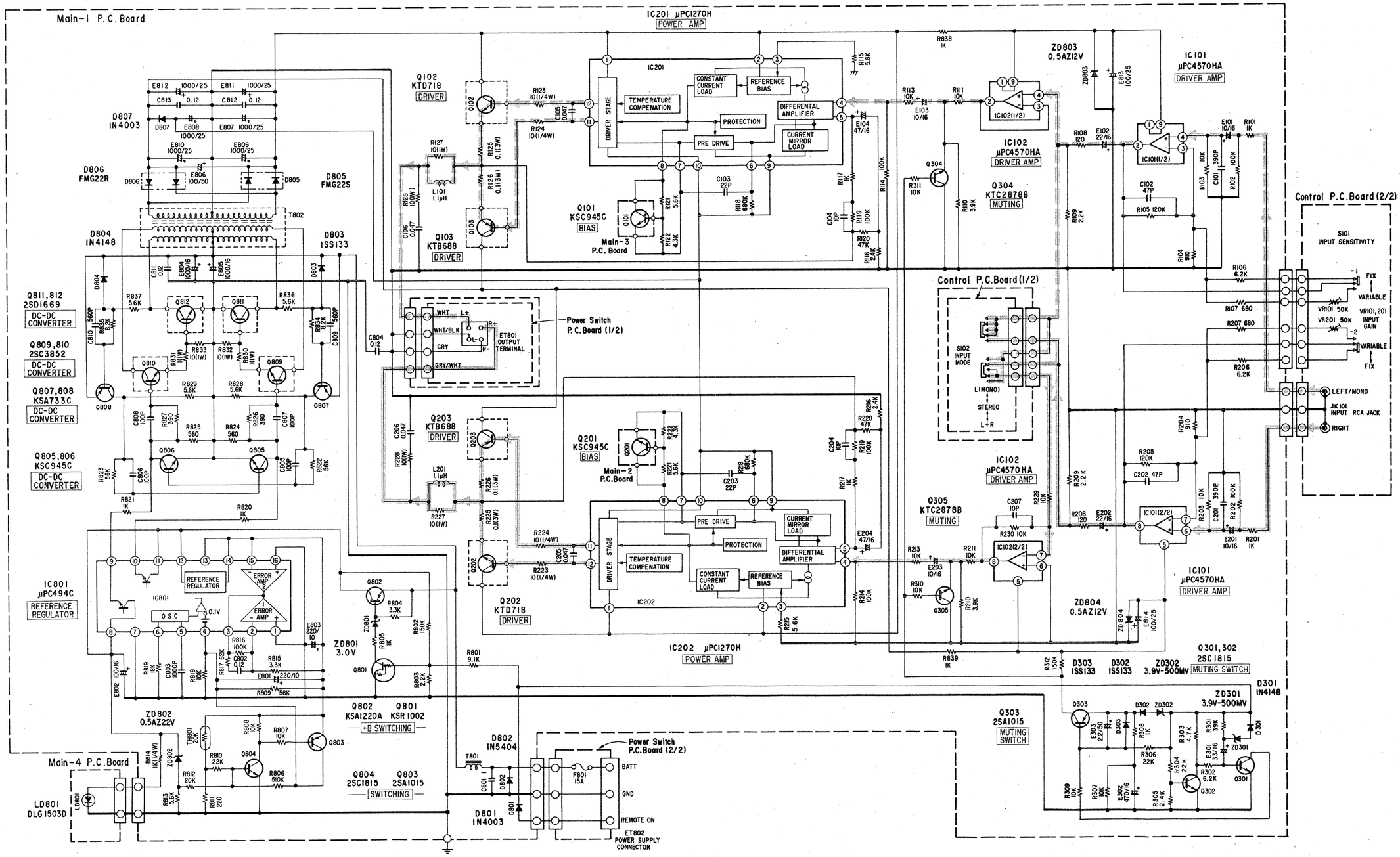
Exploded View (Cabinet)



Schematic Diagram (Refer to reverse side for IC's and transistors voltage values.)

NOTE:
1. All resistance values are in ohms. K= 1,000 M= 1,000,000
2. All capacitance values are in microfarads. P= 1/1,000,000

IC	IC801					IC201 IC202		IC102	IC101		
Transistor (Q)	Q808	Q810 Q812 Q806	Q811 Q805 Q809 Q807 Q804 Q803	Q802 Q801	Q102 Q103 Q203 Q202	Q101 Q201	Q304 Q305	Q303	Q302	Q301	



A | B | C | D | E | F | G | H

IC's And Transistors Voltage Values

Pin Name / Transistor	E	C	B
Q101	–1.4V	0.26V	—
Q102	0.5mV	23.9V	0.56V
Q103	–0.54mV	–23.2V	–0.52V
Q201	–1.4V	0.26V	—
Q202	0.5mV	23V	0.56V
Q203	–0.54mV	–23.7V	–0.52V
Q301	0V	11V	—
Q302	0V	0.34V	0.8V
Q303	10.5V	—	11V
Q304	—	0V	—
Q305	—	0V	—
Q801	0V	0.09V	2.3V
Q802	14.32V	14.3V	13.6V
Q803	5V	0.78V	5V
Q804	0V	5V	0.04V
Q805	0V	0.9V	—
Q806	0V	0.9V	—
Q807	14.3V	7.6V	15V
Q808	14.3V	7.6V	15V
Q809	0.7V	14.31V	0V
Q810	0.7V	14.31V	0V
Q811	0V	14.31V	0.35V
Q812	0V	14.31V	0.35V

IC / Pin No.	IC101	IC102	IC201	IC202	IC801
1	—	—	23.9V	23.9V	4.9V
2	7.2mV	0.79mV	23.9V	23.9V	—
3	1mV	0.79mV	17.8V	17.8V	72mV
4	0.62mV	0.15mV	5.1mV	5.1mV	0.78V
5	–11.53V	–11.53V	5.6mV	5.6mV	1.7V
6	0.62mV	0V	–21.5V	–21.5V	3.7V
7	1mV	0.56mV	–1.4V	–1.4V	0V
8	7.2mV	0.35mV	0.26V	0.26V	14.3V
9	11.53V	11.53V	–23.2V	–23.2V	4.5V
10	——	——	–23.2V	–23.2V	4.5V
11	——	——	—	—	14.3V
12	——	——	—	—	14.3V
13	——	——	——	——	5V
14	——	——	——	——	5V
15	——	——	——	——	5V
16	——	——	——	——	0V

● Measuring Condition
1. Power Supply Voltage : DC14V.
2. Measuring Meter : Digital Multi Voltmeter.
3. Measuring Point Reference : Between Ground.
4. Measuring Conditions : No Signal Input each radio
(AM: 1,000KHz,FM: 98.1MHz)
Deck in play conditions.

Schematic Diagram

IC	IC801						IC201 IC202			IC102		IC101	
Transistor (Q)	Q805	Q810 Q812 Q806	Q811 Q805 Q809 Q807 Q804 Q803	Q802 Q801		Q102 Q103 Q203 Q202	Q101 Q201		Q304 Q305		Q303	Q302	Q301

Main-1 P.C. Board

IC201 μPC1270H
POWER AMP

Q102 KTD718 DRIVER

Q103 KTB688 DRIVER

Q101 KSC945C BIAS

Main-3 P.C. Board

Q203 KTB688 DRIVER

Q201 KSC945C BIAS

Main-2 P.C. Board

Q202 KTD718 DRIVER

IC202 μPC1270H
POWER AMP

IC201
CONSTANT CURRENT LOAD
REFERENCE BIAS
TEMPERATURE COMPENATION
DIFFERENTIAL AMPLIFIER
PROTECTION
PRE DRIVE
CURRENT MIRROR LOAD
DRIVER STAGE

IC202
CONSTANT CURRENT LOAD
REFERENCE BIAS
TEMPERATURE COMPENATION
DIFFERENTIAL AMPLIFIER
PROTECTION
PRE DRIVE
CURRENT MIRROR LOAD
DRIVER STAGE

ZD803 0.5AZ12V

IC101 μPC4570HA DRIVER AMP
IC101(1/2)
IC101(2/2)

IC102 μPC4570HA DRIVER AMP
IC102(1/2)
IC102(2/2)

Q304 KTC2878B MUTING

Q305 KTC2878B MUTING

ZD804 0.5AZ12V

Control P.C.Board (1/2)

Control P.C.Board (2/2)

SI01 INPUT SENSITIVITY
FIX
VARIABLE
VR101 47K
VR101, 201 INPUT GAIN
VR201 47K
SI02 INPUT MODE
L(MONO)
STEREO
L+R
LEFT/MONO
RIGHT
ET101 INPUT

Q811,812 2SD1669 DC-DC CONVERTER

Q809,810 KSC1983 DC-DC CONVERTER

Q807,808 KSA733C DC-DC CONVERTER

Q805,806 KSC945C DC-DC CONVERTER

D806 HER1603A
D805 HER1603C
D807 IN4003
D804 IN4148
D803 1SS133
T802

Power Switch P.C.Board (1/2)
WHT
WHT/BLK
GRY/BLK
GRY/WHT
ET801 OUTPUT TERMINAL

Power Switch P.C.Board (2/2)
BATT
GND
REMOTE ON
ET802 POWER SUPPLY CONNECTOR

F801 15A

D802 IN5404
D801 IN4003

IC801 μPC494C REFERENCE REGULATOR
REFERENCE REGULATOR
OSC
ERROR AMP
ERROR AMP
0.01V

ZD801 3.0V
ZD802 0.5AZ22V

Q802 KSA1220A +B SWITCHING
Q801 KSR1002 +B SWITCHING

Q804 2SC1815 SWITCHING
Q803 2SA1015 SWITCHING

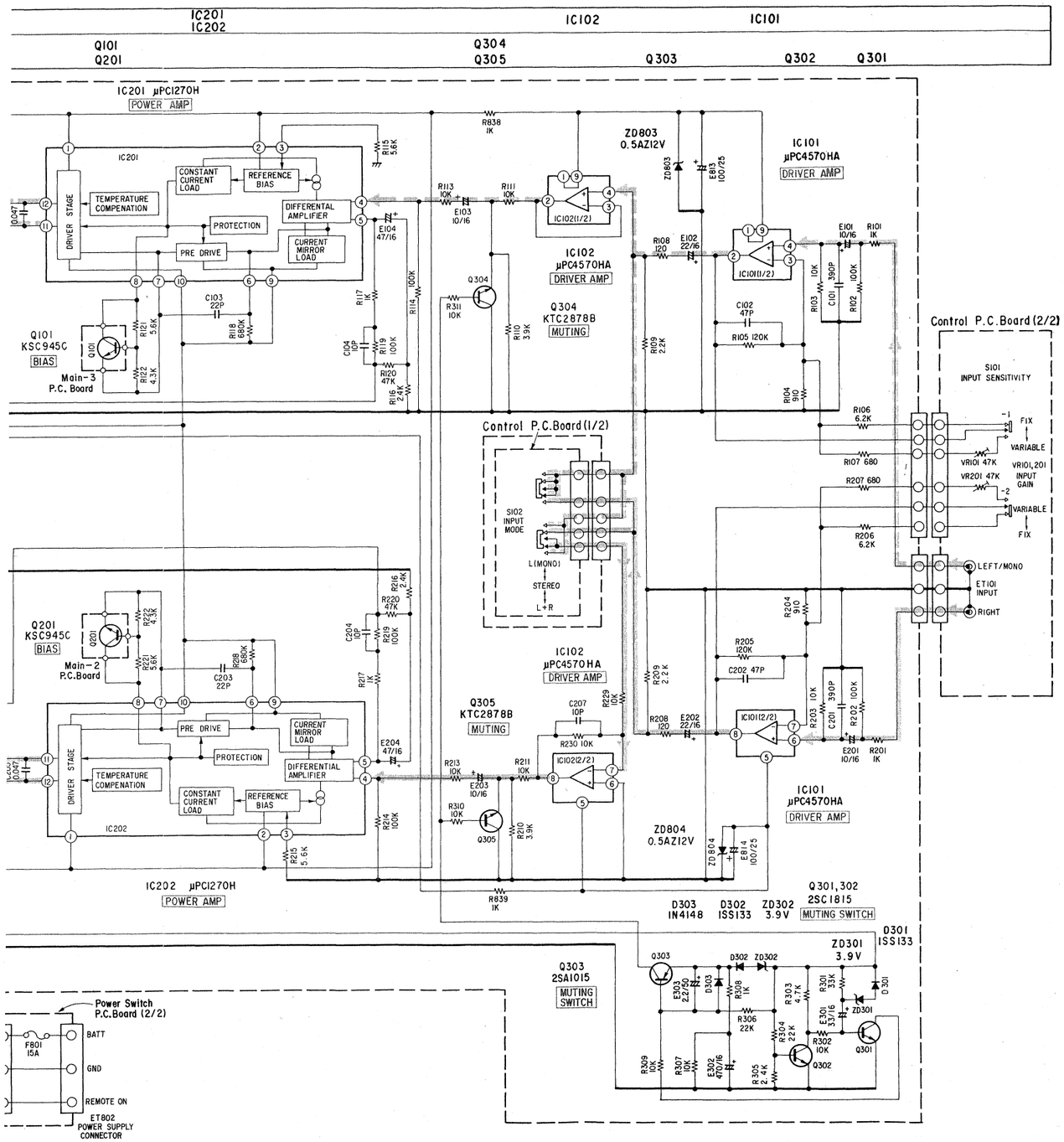
Main-4 P.C.Board
LD801 DLG1503D

Q303 2SA1015 MUTING SWITCH
Q301,302 2SC1815 MUTING SWITCH
D303 IN4148
D302 1SS133
ZD302 3.9V
ZD301 3.9V
D301 1SS133

IC'

Pin N	
Trans	
Q1	
Q1	
Q1	
Q2	
Q2	
Q2	
Q3	
Q3	
Q3	
Q3	
Q3	
Q8	
Q8	
Q8	
Q8	
Q8	
Q8	
Q8	
Q8	
Q8	
Q8	
Q8	
Q8	

NOTE:
1. All re
2. All ca
● Meas
1. Powe
2. Mea
3. Mea
4. Mea



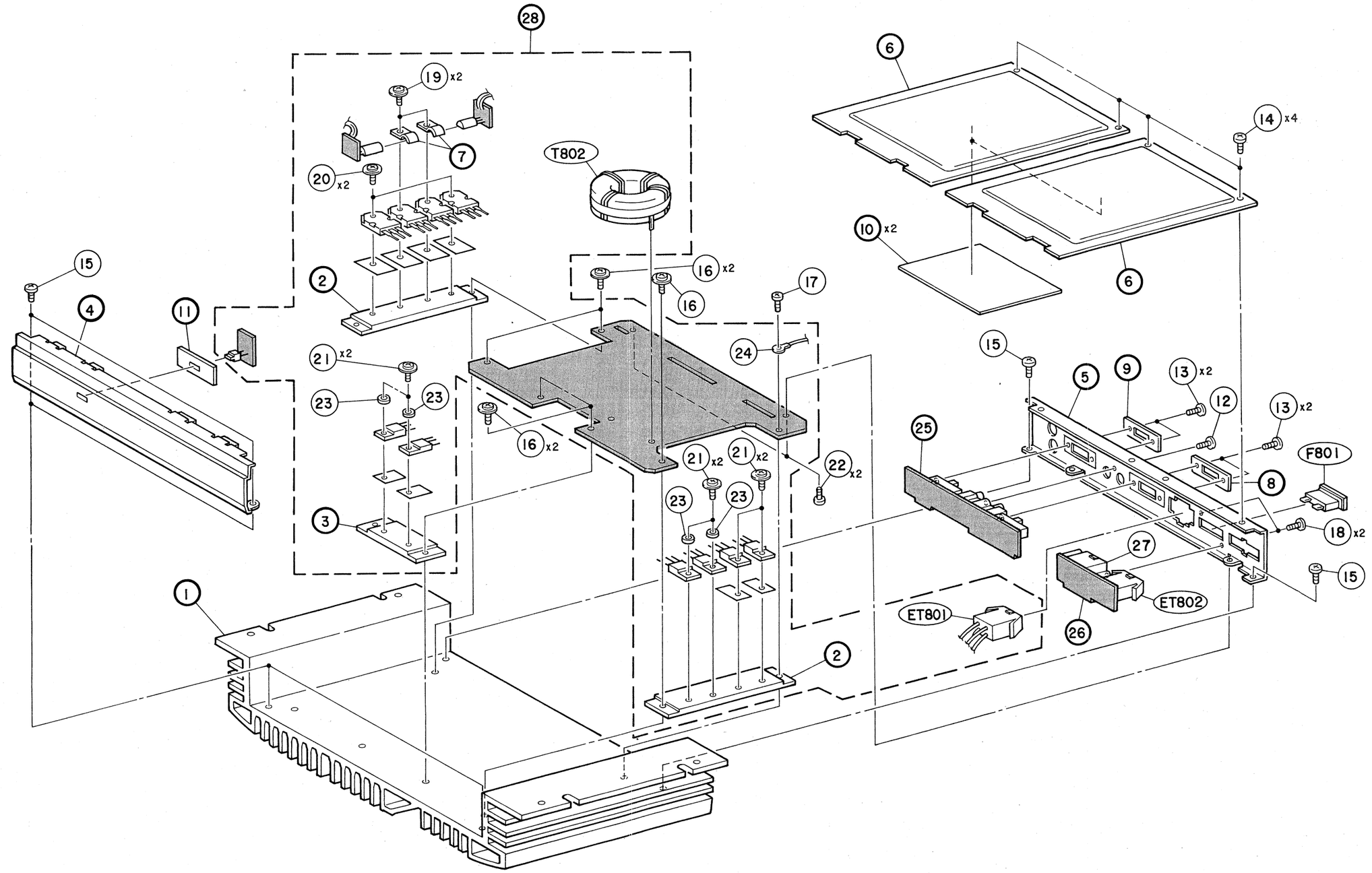
IC's And Transistors Voltage Values

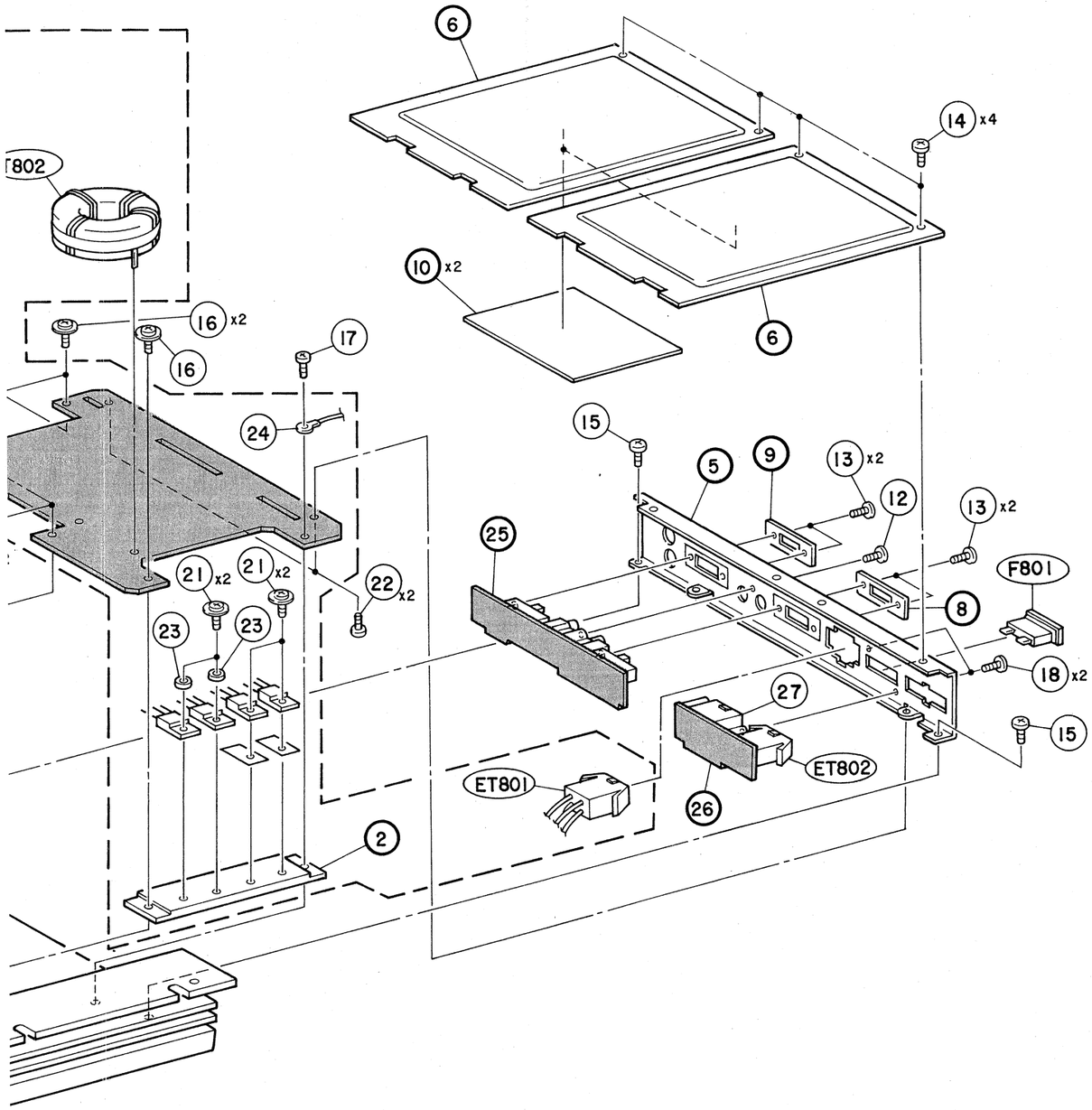
Pin Name / Transistor	E	C	B
Q101	–1.4V	0.26V	—
Q102	0.5mV	23.9V	0.56V
Q103	–0.54mV	–23.2V	–0.52V
Q201	–1.4V	0.26V	—
Q202	0.5mV	23V	0.56V
Q203	–0.54mV	–23.7V	–0.52V
Q301	0V	11V	—
Q302	0V	0.34V	0.8V
Q303	10.5V	—	11V
Q304	—	0V	—
Q305	—	0V	—
Q801	0V	0.09V	2.3V
Q802	14.32V	14.3V	13.6V
Q803	5V	0.78V	5V
Q804	0V	5V	0.04V
Q805	0V	0.9V	—
Q806	0V	0.9V	—
Q807	14.3V	7.6V	15V
Q808	14.3V	7.6V	15V
Q809	0.7V	14.31V	0V
Q810	0.7V	14.31V	0V
Q811	0V	14.31V	0.35V
Q812	0V	14.31V	0.35V

IC / Pin No.	IC101	IC102	IC201	IC202	IC801
1	—	—	23.9V	23.9V	4.9V
2	7.2mV	0.79mV	23.9V	23.9V	—
3	1mV	0.79mV	17.8V	17.8V	72mV
4	0.62mV	0.15mV	5.1mV	5.1mV	0.78V
5	–11.53V	–11.53V	5.6mV	5.6mV	1.7V
6	0.62mV	0V	–21.5V	–21.5V	3.7V
7	1mV	0.56mV	–1.4V	–1.4V	0V
8	7.2mV	0.35mV	0.26V	0.26V	14.3V
9	11.53V	11.53V	–23.2V	–23.2V	4.5V
10	— —	— —	–23.2V	–23.2V	4.5V
11	— —	— —	—	—	14.3V
12	— —	— —	—	—	14.3V
13	— —	— —	— —	— —	5V
14	— —	— —	— —	— —	5V
15	— —	— —	— —	— —	5V
16	— —	— —	— —	— —	0V

NOTE:
1. All resistance values are in ohms. K= 1,000 M= 1,000,000
2. All capacitance values are in microfarads. P= 1/1,000,000
● Measuring Condition
1. Power Supply Voltage : DC14.4V.
2. Measuring Meter : Digital Multi Voltmeter.
3. Measuring Point Reference : Between Ground.
4. Measuring Conditions : No Signal Input.

Exploded View (Cabinet)





Cabinet Assembly Parts List

Symbol No.	Index	Part No.	Description		
12	3-G	03E06409S01	Screw, Tapping (M3 × 10)		
13	3-G	03E06403S01	Screw, Mch (M2.6 × 4)		
14	2-G	03E06405S01	Screw, Tpt (M2.6 × 4)		
15	2-A	03E06404S01	Screw, Tapping (M2.6 × 6)		
16	2-D	03E06406S01	Screw, Tapping (M2.6 × 10)		
17	2-E	03E06407S01	Screw, Tapping (M2.6 × 10)		
18	4-H	03E06408S01	Screw, Tapping (M2 × 8)		
19	1-C	03E06402S01	Screw, Tapping (M3 × 10)		
20	2-C	03E06401S01	Screw, Tapping (M3 × 9)		
21	3-C	03E06400S01	Screw, Tapping (M3 × 7)		
22	3-E	03E06247S01	Screw, Tpt (M2.6 × 5)		
23	3-C	43E06367S01	Bushing		
24	3-E	01E06194S01	Lug, Wire (BLK)		
27	4-G	09T70751F01	Auto, Fuse Holder		

NOTE: The parts without part numbers are not supplied.

Electrical Parts List

Resistors: Carbon Resistors under 1/4 watts are not mentioned in the parts list, please confirm them by schematic diagram.
μF = microfarads, pF = picofarads.

Symbol No.	Part No.	Description		

Abbreviations

RES. = Resistor	CAP. = Capacitor
C.F. = Carbon Film	ELY. = Electrolytic
M.F. = Metal Film	CER. = Ceramic
M.O. = Metal Oxide Film	MYL. = Mylar
M.P. = Metal Plate	TAN. = Tantalum
TR. = Transistor	POLY. = Polystyrol
TRANS. = Transformer	PP. = Polypropylene
CP. = Chip	PLT. = Polyethylene

Main P.C.Board

IC's

IC101	51T83403F03	μPC4570HA		
IC102	51T83403F03	μPC4570HA		
IC201	51E06446S01	μPC1270H		
IC202	51E06446S01	μPC1270H		
IC801	51T70759F01	μPC494C		

Transistors

Q101	48E05944S01	KSC945C		
Q102	48E06440S01	KTD718		
Q103	48E06435S01	KTB688		
Q201	48E05944S01	KSC945C		
Q202	48E06440S01	KTD718		
Q203	48E06435S01	KTB688		
Q301	48T43525F03	2SC1815		
Q302	48T43525F03	2SC1815		
Q303	48T51118F01	2SA1015		
Q304	48T51878F03	KTC2878B		
Q305	48T51878F03	KTC2878B		
Q801	48E06436S01	KSR1002		
Q802	48E06434S01	KSA1220A		
Q803	48T51118F01	2SA1015		
Q804	48T43525F03	2SC1815		
Q805	48E05944S01	KSC945C		
Q806	48E05944S01	KSC945C		
Q807	48E05942S01	KSA733C		
Q808	48E05942S01	KSA733C		
Q809	48E06438S01	KSC1983		
Q810	48E06438S01	KSC1983		
Q811	48E06439S01	2SD1669		
Q812	48E06439S01	2SD1669		

Diodes / LED

D301	48T68829F01	1SS133		
D302	48T68829F01	1SS133		
D303	48T68829F01	1SS133		
D801	48S40477U01	1N4003		
D802	48E06430S01	IN5404		
D803	48T68829F01	1SS133		
D804	48E05947S01	1N4148		
D805	48E06432S01	HER1603C		
D806	48E06431S01	HER1603A		
D807	48S40477U01	1N4003		
LD801	48E06442S01	LED., DLG1503D		
ZD301	48E06443S01	Zener, 3.9V-500VW		
ZD302	48E06443S01	Zener, 3.9V-500VW		
ZD801	48E06433S01	Zener, 3.0V-B		
ZD802	48E06445S01	Zener, 0.5AZ22V-B		
ZD803	48E06444S01	Zener, 0.5AZ12V-B		
ZD804	48E06444S01	Zener, 0.5AZ12V-B		

Coils / Transformer

L101	24E06423S01	Coil 1.1μH		
L201	24E06423S01	Coil 1.1μH		
T801	25E06425S01	Choke, TRANS.		

Thermister

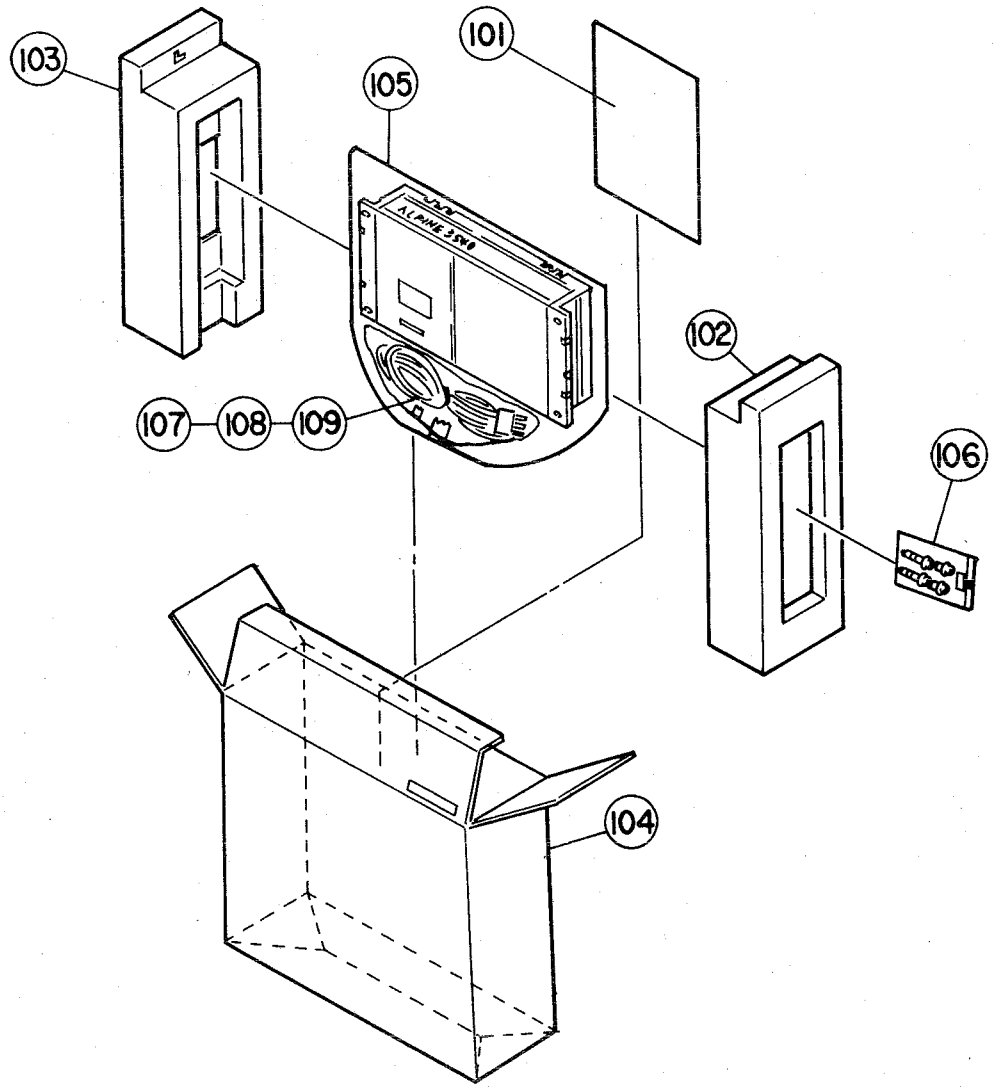
TH801	48E06441S01	20K ohm		

Capacitors

C101	21E06808S01	CER.,	390pF	
E101	23E06260S01	ELY.,	10μF/16V	
C102	21E06806S01	CER.,	47pF	
E102	23T43247F10	ELY.,	22μF/16V	
C103	21E06805S01	CER.,	22pF	
E103	23E06260S01	ELY.,	10μF/16V	
C104	21E06804S01	CER.,	10pF	
E104	23E06269S01	ELY.,	47μF/16V	
C105	08E06411S01	MYL.,	0.047μF	
C106	08E06411S01	MYL.,	0.047μF	
C201	21E06808S01	CER.,	390pF	
E201	23E06260S01	ELY.,	10μF/16V	
C202	21E06806S01	CER.,	47pF	
E202	23T43247F10	ELY.,	22μF/16V	
C203	21E06805S01	CER.,	22pF	
E203	23E06260S01	ELY.,	10μF/16V	
C204	21E06804S01	CER.,	10pF	
E204	23E06269S01	ELY.,	47μF/16V	
C205	08E06411S01	MYL.,	0.047μF	
C206	08E06411S01	MYL.,	0.047μF	
C207	21E06804S01	CER.,	10pF	
E301	23E06415S01	ELY.,	33μF/16V	
E302	23E06417S01	ELY.,	470μF/16V	
E303	23E06419S01	ELY.,	2.2μF/50V	
C801	08E06413S01	MYL.,	1pF	
E801	23E06414S01	ELY.,	220μF/10V	
C802	08E06412S01	MYL.,	0.12μF	
E802	23E06416S01	ELY.,	100μF/16V	
C803	08E06410S01	MYL.,	1000pF	
E803	23E06414S01	ELY.,	220μF/10V	
C804	08E06412S01	MYL.,	0.12μF	

Symbol No.	Part No.	Description		
E804	23E06421S01	ELY., 1000μF/16V		
C805	21E06807S01	CER., 100pF		
E805	23E06421S01	ELY., 1000μF/16V		
C806	21E06807S01	CER., 100pF		
E806	23E06422S01	ELY., 100μF/50V		
C807	21E06807S01	CER., 100pF		
E807	23E06420S01	ELY., 1000μF/25V		
C808	21E06807S01	CER., 100pF		
E808	23E06420S01	ELY., 1000μF/25V		
C809	21E06809S01	CER., 560pF		
E809	23E06420S01	ELY., 1000μF/25V		
C810	21E06809S01	CER., 560pF		
E810	23E06420S01	ELY., 1000μF/25V		
C811	08E06412S01	MYL., 0.12μF		
E811	23E06420S01	ELY., 1000μF/25V		
C812	08E06412S01	MYL., 0.12μF		
E812	23E06420S01	ELY., 1000μF/25V		
C813	08E06412S01	MYL., 0.12μF		
E813	23E06418S01	ELY., 100μF/25V		
E814	23E06418S01	ELY., 100μF/25V		
Resistors				
R125	06E06810S01	W.W., 0.1 ohm 3W		
R126	06E06810S01	W.W., 0.1 ohm 3W		
R127	06E06995S01	M.O., 10 ohm 1W		
R128	06E06995S01	M.O., 10 ohm 1W		
R225	06E06810S01	W.W., 0.1 ohm 3W		
R226	06E06810S01	W.W., 0.1 ohm 3W		
R227	06E06995S01	M.O., 10 ohm 1W		
R228	06E06995S01	M.O., 10 ohm 1W		
R830	06E06994S01	M.O., 1 ohm 1W		
R831	06E06994S01	M.O., 1 ohm 1W		
R832	06E06995S01	M.O., 10 ohm 1W		
R833	06E06995S01	M.O., 10 ohm 1W		
Control P.C.Board				
Switches				
S101	40E06428S01	SSSA06-2 (VAR/FIX)		
S102	40E06429S01	KSA4304 (MONO)		
Volumes / Jack				
VR101	18E06996S01	47K ohm		
VR201	18E06996S01	47K ohm		
ET101	09T70753F10	RCA Jack		
Miscellaneous				
ET801	01E06398S01	Assy., Output Wire		
ET802	01E07209S01	Assy., Power Connector		
F801	65T58596F05	Auto, Fuse 15A		
T802	25E06424S01	Assy., Power TRANS.		

Packing Method View



Packing Assembly Parts List

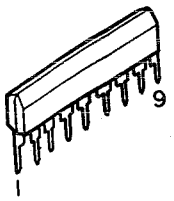
Symbol No.	Part No.	Description		
■ 101	68P94789F40	Owners, Manual		
● 101	68P13420W56	Owners, Manual		
102	56E06447S01	Tray, Packing (R)		
103	56E06448S01	Tray, Packing (L)		
■ 104	56E06449S01	Carton, Packing (IND)		
● 104	56E07330S01	Carton, Packing (IND)		
105	56E06450S01	Sack, Polyethylene		
106	01E06394S01	Assy., Kit Instal		

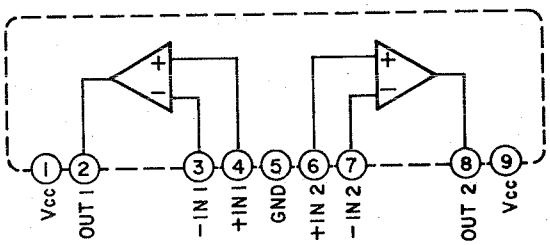
Symbol No.	Part No.	Description		
■ 106-1	03E06399S01 (M4 × 14)	Screw, Tapping		
■ 106-2	65T58596F05	Auto, Fuse 15A		
107	01E06395S01	Assy., Kit Output Wire (S.T)		
108	01E06396S01	Assy., Kit Output Wire		
109	01E06397S01	Assy., Kit Power Wire		

NOTE: ■ : For North American model only.
● : For West Germany model only.
Others:Common.

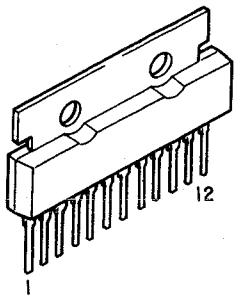
Semi-Conductors Lead Identifications

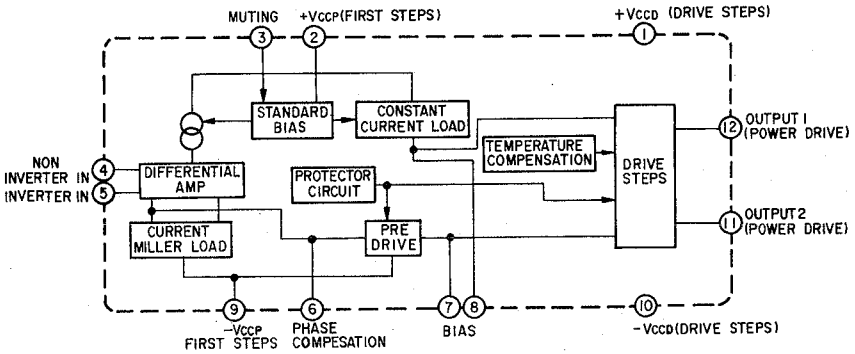
μPC4570HA: IC101, 102



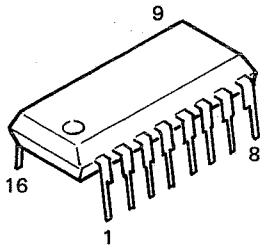


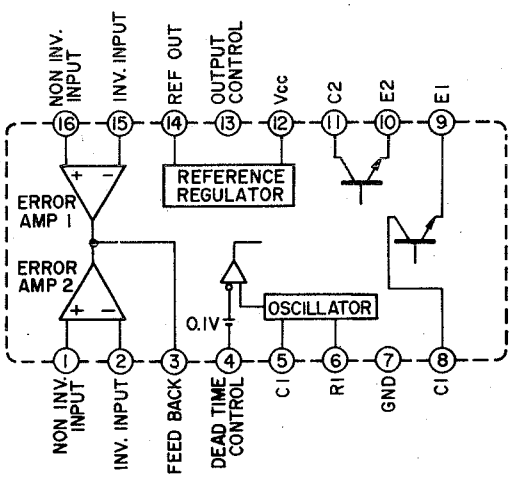
μPC1270H: IC201, 202



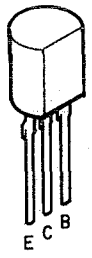


μPC494C: IC801

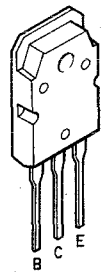




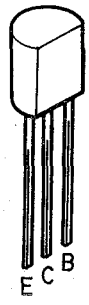
KSC945C: Q101, 201, 805, 806
2SC1815: Q301, 302, 804
2SA1015: Q303, 803
KTC2878B: Q304, 305
KSA733C: Q807, 808

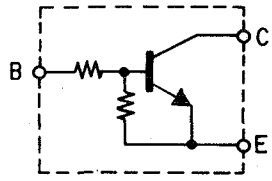


KTD718: Q102, 202
KTB688: Q103, 203

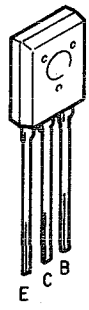


KSR1002: Q801

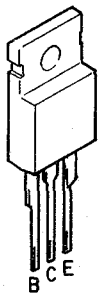




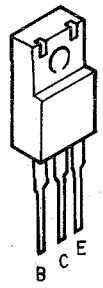
KSA1220A: Q802



KSC1983: Q809, 810



2SD1669: Q811, 812

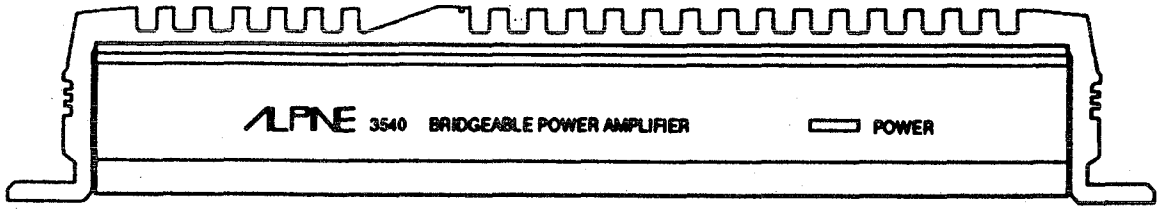


ALPINE SERVICE MANUAL

Bridgeable Power Amplifier

—REVISED—

- **Serial Numbers after No. 90831801 ~**
- **This service manual contains only the differences from the Service Manual of Model 3540 (68P20617W02).**



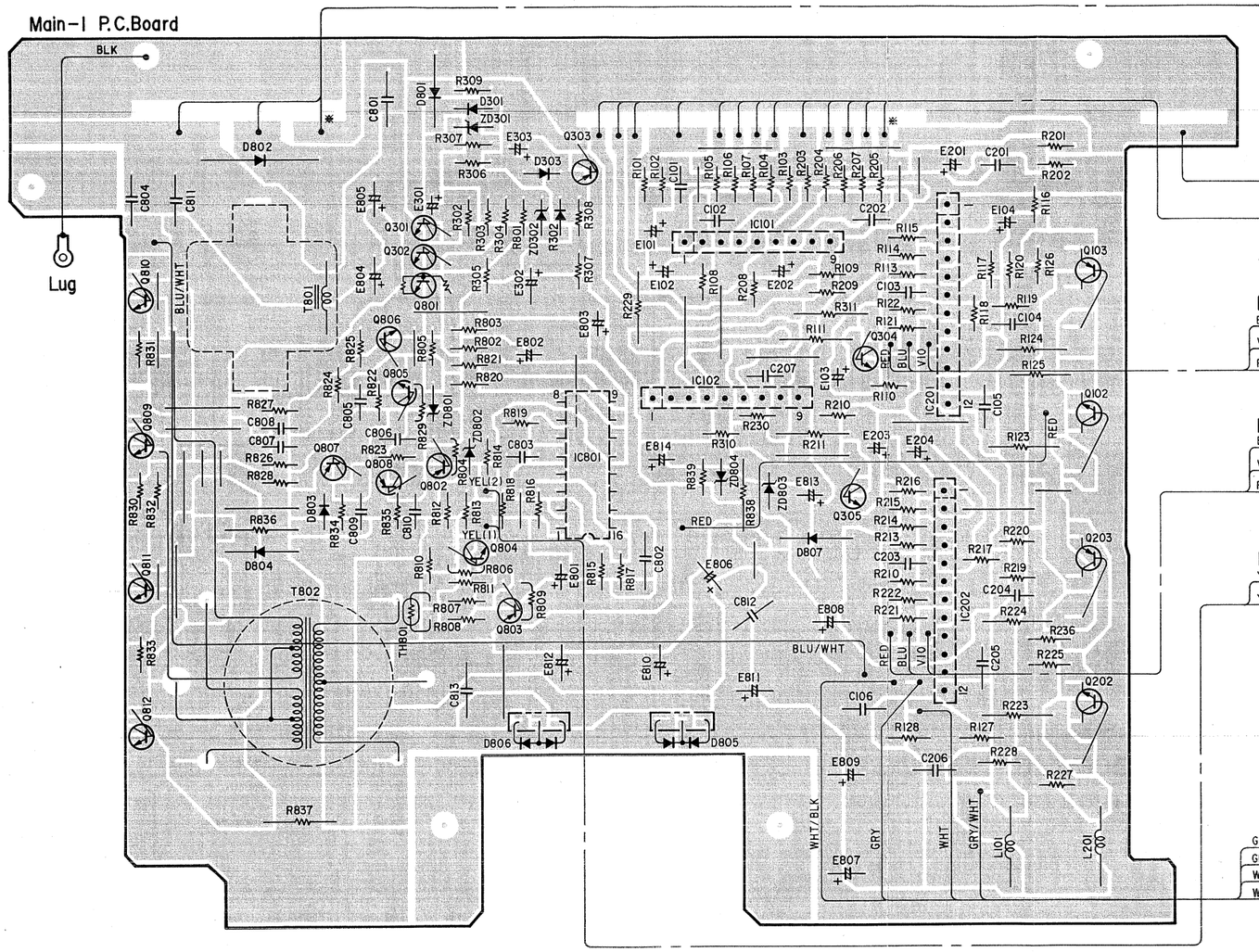
3540

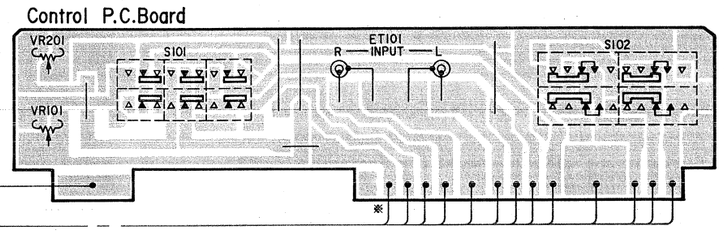
Contents

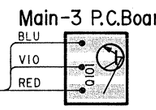
IC's And Transistors Voltage Values 3
Parts Layout on P.C.Boards and Wiring Diagram ..... 5 to 6
Schematic Diagram ..... 7 to 8
Exploded View (Cabinet) ..... 9 to 10
Cabinet Assembly Parts List 11
Electrical Parts List ..... 12 to 13
Packing Assembly Parts List 13

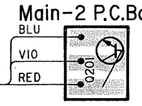
Additional Schematic Diagram Inserted.

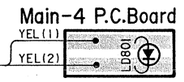
Parts Layout on P.C.Boards and Wiring Diagram

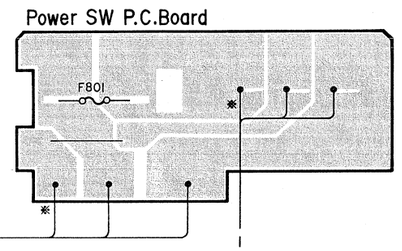


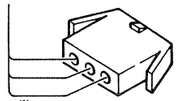




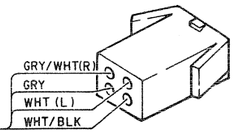








※ Power Supply Connector (ET802)



BLU	Blue
GRN	Green
BLK	Black
GRY	Gray
WHT	White
RED	Red
BRN	Brown
ORG	Orange
YEL	Yellow
VIO	Violet
BLU/WHT	Blue / White
WHT/BLK	White / Black
GRY/WHT	Gray / White

Disassembly Instructions

1. Removal of Cover-AL

(1) After removal of bottom cover, remove ten screws marked " ● " as shown in Figure 1.

(2) Thus, Cover-AL and Main P.C.Board can be removed together.

2. Removal of Power Switch P.C.Board

(1) After removal of cover-AL, remove two screws marked " ❋ " and four hooks (a), the solder (a) as shown in Figure 2, 3.

3. Removal of Control P.C.Board

(1) After removal of cover-AL, remove five screws marked " ▲ " and the solder (b) as shown in Figure 2, 3.

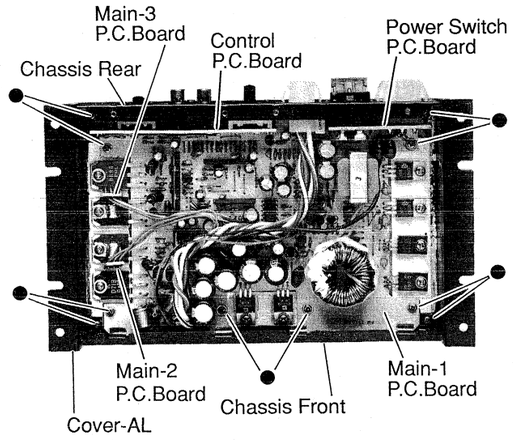


Figure 1

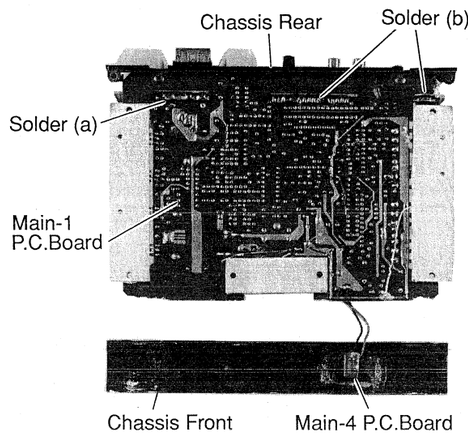


Figure 2

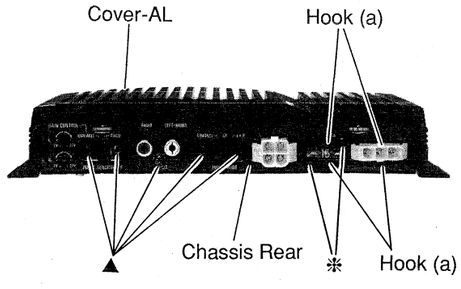
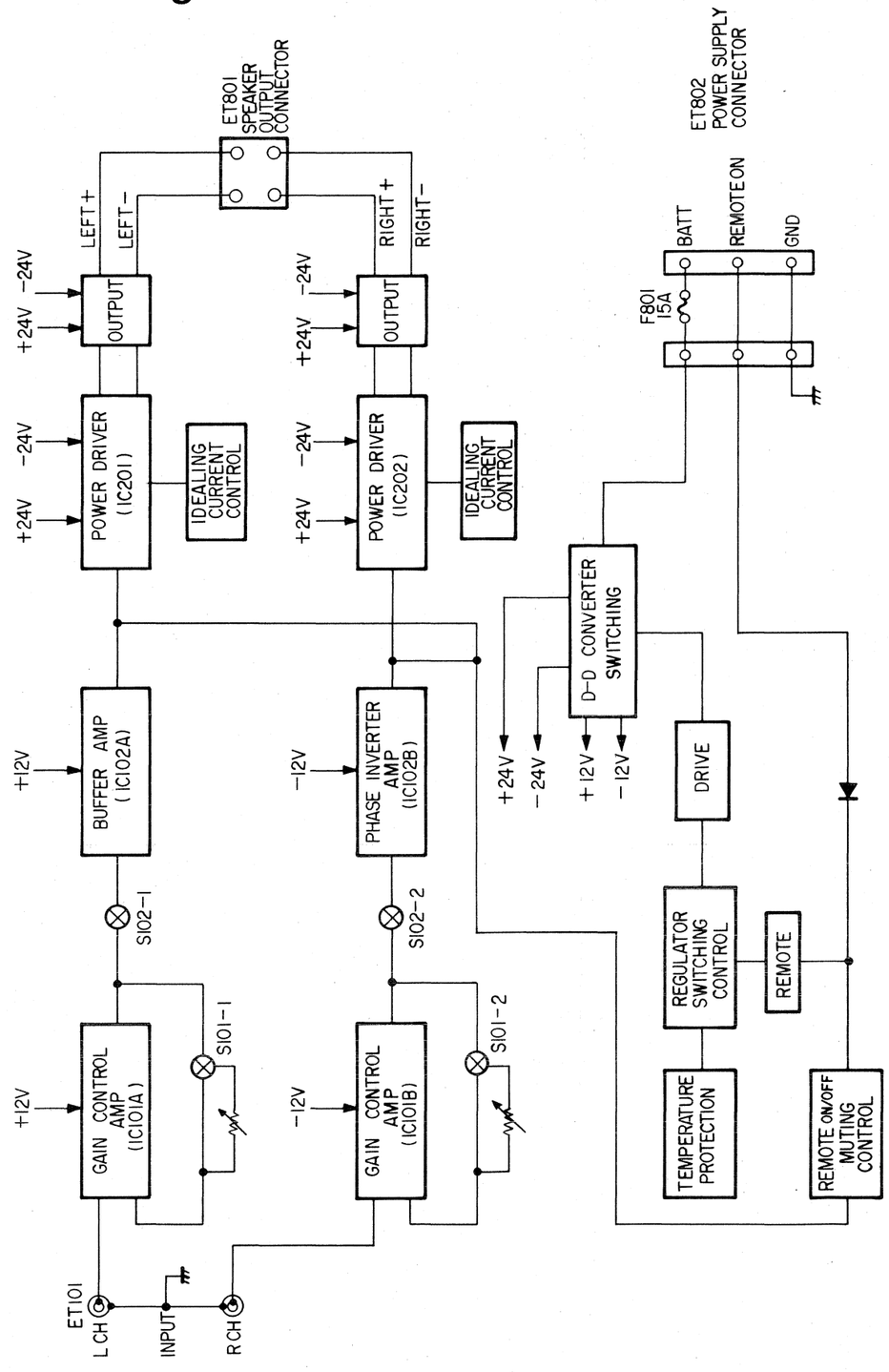
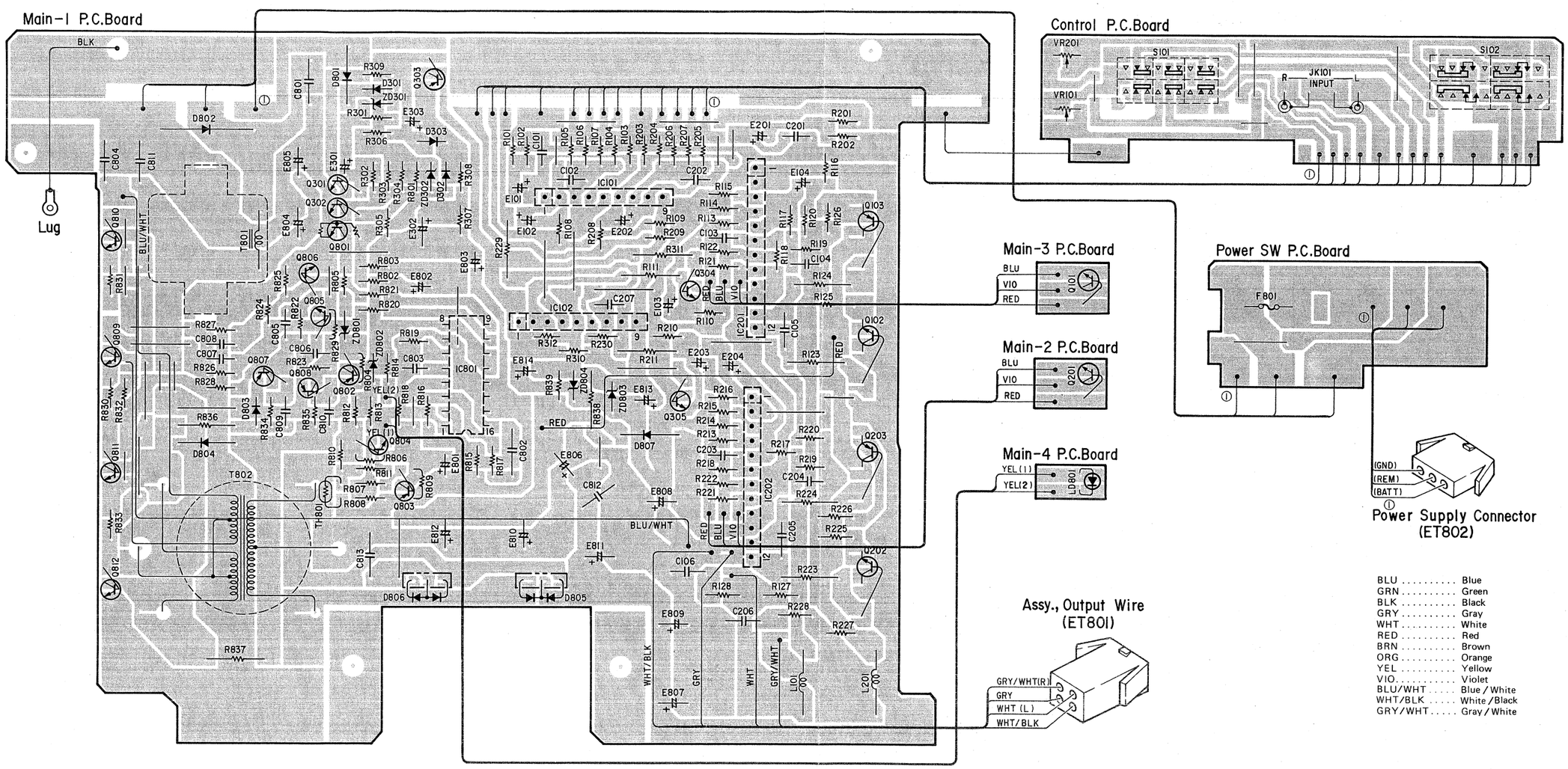


Figure 3

Block Diagram



Parts Layout on P.C.Boards and Wiring Diagram



1 2 3 4 5

A | B | C | D | E | F | G | H

IC's And Transistors Voltage Values

Pin Name / Transistor	E	C	B
Q101	–1.4V	0.26V	—
Q102	0.5mV	23.9V	0.56V
Q103	–0.54mV	–23.2V	–0.52V
Q201	–1.4V	0.26V	—
Q202	0.5mV	23V	0.56V
Q203	–0.54mV	–23.7V	–0.52V
Q301	0V	11V	—
Q302	0V	0.34V	0.8V
Q303	10.5V	—	11V
Q304	—	0V	—
Q305	—	0V	—
Q801	0V	0.09V	2.3V
Q802	14.32V	14.3V	13.6V
Q803	5V	0.78V	5V
Q804	0V	5V	0.04V
Q805	0V	0.9V	—
Q806	0V	0.9V	—
Q807	14.3V	7.6V	15V
Q808	14.3V	7.6V	15V
Q809	0.7V	14.31V	0V
Q810	0.7V	14.31V	0V
Q811	0V	14.31V	0.35V
Q812	0V	14.31V	0.35V

IC / Pin No.	IC101	IC102	IC201	IC202	IC801
1	—	—	23.9V	23.9V	4.9V
2	7.2mV	0.79mV	23.9V	23.9V	—
3	1mV	0.79mV	17.8V	17.8V	72mV
4	0.62mV	0.15mV	5.1mV	5.1mV	0.78V
5	–11.53V	–11.53V	5.6mV	5.6mV	1.7V
6	0.62mV	0V	–21.5V	–21.5V	3.7V
7	1mV	0.56mV	–1.4V	–1.4V	0V
8	7.2mV	0.35mV	0.26V	0.26V	14.3V
9	11.53V	11.53V	–23.2V	–23.2V	4.5V
10	— —	— —	–23.2V	–23.2V	4.5V
11	— —	— —	—	—	14.3V
12	— —	— —	—	—	14.3V
13	— —	— —	— —	— —	5V
14	— —	— —	— —	— —	5V
15	— —	— —	— —	— —	5V
16	— —	— —	— —	— —	0V

● Measuring Conditions
1. Power Supply Voltage : DC14.4V.
2. Measuring Meter : Digital Multi Voltmeter.
3. Measuring Point Reference : Between Ground.
4. Measuring Condition : No Signal Input.

Cabinet Assembly Parts List

Symbol No.	Index	Part No.	Description
12	3-G	03E06796S01	Screw, Tapping (M3 × 10)
13	3-G	03E06403S01	Screw, Mch. (M2.6 × 4)
14	2-G	03E06792S01	Screw, Mch. (M2.6 × 5)
15		03E06793S01	Screw, Tapping (M2.6 × 5)
16		03E06796S02	Screw, Tapping (M2.6 × 9)
17	2-E	03E06796S03	Screw, Tapping (M2.6 × 9)
18	4-H	03E08338S05	Screw, Tapping (M2 × 6)
20	2-C	03E06798S01	Screw, Tapping (M3 × 9)
21		03E06797S01	Screw, Tapping (M3 × 7)
22	3-E	03E06247S01	Screw, Mch. (M2.6 × 5)
23		43E06367S01	Bushing
24	3-E	01E06194S01	Lug, Wire (BLK)
27	4-G	09T70751F01	Auto, Fuse Holder

NOTE: The parts without part numbers are not supplied.

Electrical Parts List

Resistors: Carbon Resistors under 1/4 watts are not mentioned in the parts list, please confirm them by schematic diagram.
μF = microfarads, pF = picofarads.

Symbol No.	Part No.	Description

Abbreviations

RES. = Resistor	CAP. = Capacitor
C.F. = Carbon Film	ELY. = Electrolytic
M.F. = Metal Film	CER. = Ceramic
M.O. = Metal Oxide Film	MYL. = Mylar
M.P. = Metal Plate	TAN. = Tantalum
TR. = Transistor	POLY. = Polystyrol
TRANS. = Transformer	PP. = Polypropylene
CP. = Chip	PLT. = Polyethylene

Main P.C.Board

IC's

IC101	51T83403F03	μPC4570HA
IC102	51T83403F03	μPC4570HA
IC201	51E06446S01	μPC1270H
IC202	51E06446S01	μPC1270H
IC801	51T70759F01	μPC494C

Transistors

Q101	48E05944S01	KSC945C
Q102	48E06440S01	KTD718
Q103	48E06435S01	KTB688
Q201	48E05944S01	KSC945C
Q202	48E06440S01	KTD718
Q203	48E06435S01	KTB688
Q301	48S43525F03	2SC1815
Q302	48S43525F03	2SC1815
Q303	48T51118F01	2SA1015
Q304	48T51878F03	2SC2878B
Q305	48T51878F03	2SC2878B
Q801	48E06436S01	KSR1002
Q802	48E06434S01	KSA1220A
Q803	48T51118F01	2SA1015
Q804	48S43525F03	2SC1815
Q805	48E05944S01	KSC945C
Q806	48E05944S01	KSC945C
Q807	48E05942S01	KSA733C
Q808	48E05942S01	KSA733C
Q809	48T82883F01	2SC3852
Q810	48T82883F01	2SC3852
Q811	48E06439S02	2SD1669
Q812	48E06439S02	2SD1669

Diodes / LED

D301	48E05947S01	IN4148
D302	48T68828F01	1SS133
D303	48T68828F01	1SS133
D801	48S40477U01	1N4003
D802	48E06430S01	IN5404
D803	48T68828F01	1SS133
D804	48E05947S01	1N4148
D805	48T80987F01	FMG22S
D806	48T80987F02	FMG22R
D807	48S40477U01	1N4003
LD801	48E06442S01	LED., DLG1503D
ZD301	48E06443S01	Zener, 3.9V-500MW
ZD302	48E06443S01	Zener, 3.9V-500MW
ZD801	48E06433S01	Zener, 3.0V-B
ZD802	48E06445S01	Zener, 0.5AZ22V-B
ZD803	48E06444S01	Zener, 0.5AZ12V-B
ZD804	48E06444S01	Zener, 0.5AZ12V-B

Coils / Transformer

L101	24E06423S01	Coil 1.1μH
L201	24E06423S01	Coil 1.1μH
T801	25E06425S01	Choke, Trans.

Thermister

TH801	48E06441S01	20K ohm

Capacitors

C101	21E06808S01	CER.,	390pF
E101	23E06260S01	ELY.,	10μF/16V
C102	21E06806S01	CER.,	47pF
E102	23T43247F10	ELY.,	22μF/16V
C103	21E06805S01	CER.,	22pF
E103	23E06260S01	ELY.,	10μF/16V
C104	21E06804S01	CER.,	10pF
E104	23E06269S01	ELY.,	47μF/16V
C105	08E06411S01	MYL.,	0.047μF
C106	08E06411S01	MYL.,	0.047μF
C201	21E06808S01	CER.,	390pF
E201	23E06260S01	ELY.,	10μF/16V
C202	21E06806S01	CER.,	47pF
E202	23T43247F10	ELY.,	22μF/16V
C203	21E06805S01	CER.,	22pF
E203	23E06260S01	ELY.,	10μF/16V
C204	21E06804S01	CER.,	10pF
E204	23E06269S01	ELY.,	47μF/16V
C205	08E06411S01	MYL.,	0.047μF
C206	08E06411S01	MYL.,	0.047μF
C207	21E06804S01	CER.,	10pF
E301	23E06415S01	ELY.,	33μF/16V
E302	23E06417S01	ELY.,	470μF/16V
E303	23E06419S01	ELY.,	2.2μF/50V
C801	08E06413S01	MYL.,	1μF
E801	23E06414S01	ELY.,	220μF/10V
C802	08E06412S01	MYL.,	0.12μF
E802	23E06416S01	ELY.,	100μF/16V
C803	08E06410S01	MYL.,	1000pF
E803	23E06414S01	ELY.,	220μF/10V
C804	08E06412S01	MYL.,	0.12μF

Packing Assembly Parts List

Symbol No.	Part No.	Description
E804	23E08565S01	ELY., 1000µF/16V
C805	21E06807S01	CER., 100pF
E805	23E08565S01	ELY., 1000µF/16V
C806	21E06807S01	CER., 100pF
E806	23E06422S01	ELY., 100µF/50V
C807	21E06807S01	CER., 100pF
E807	23E08565S02	ELY., 1000µF/25V
C808	21E06807S01	CER., 100pF
E808	23E08565S02	ELY., 1000µF/25V
C809	21E06809S01	CER., 560pF
E809	23E08565S02	ELY., 1000µF/25V
C810	21E06809S01	CER., 560pF
E810	23E08565S02	ELY., 1000µF/25V
C811	08E06412S01	MYL., 0.12µF
E811	23E08565S02	ELY., 1000µF/25V
C812	08E06412S01	MYL., 0.12µF
E812	23E08565S02	ELY., 1000µF/25V
C813	08E06412S01	MYL., 0.12µF
E813	23E06418S01	ELY., 100µF/25V
E814	23E06418S01	ELY., 100µF/25V
Resistors		
R125	06E06810S01	W.W., 0.1 ohm 3W
R126	06E06810S01	W.W., 0.1 ohm 3W
R127	06E06995S01	M.O., 10 ohm 1W
R128	06E06995S01	M.O., 10 ohm 1W
R225	06E06810S01	W.W., 0.1 ohm 3W
R226	06E06810S01	W.W., 0.1 ohm 3W
R227	06E06995S01	M.O., 10 ohm 1W
R228	06E06995S01	M.O., 10 ohm 1W
R830	06E06994S01	M.O., 1 ohm 1W
R831	06E06994S01	M.O., 1 ohm 1W
R832	06E06995S01	M.O., 10 ohm 1W
R833	06E06995S01	M.O., 10 ohm 1W
Control P.C.Board		
Switches		
S101	40E06428S01	SSSA06-2 (VAR/FIX)
S102	40E06429S01	KSA4304 (MONO)
Volumes / Jack		
JK101	09T70753F10	RCA Jack
VR101	18E08570S01	50K ohm
VR201	18E08570S01	50K ohm
Miscellaneous		
ET801	01E06398S01	Assy., Output Wire
ET802	01E07209S01	Assy., Power Connector
F801	65T58596F05	Auto, Fuse 15A
T802	25E06424S01	Assy., Power Trans.

Symbol No.	Part No.	Description
■ 101	68P94789F40	Owner's, Manual
● 101	68P13420W56	Owner's, Manual
102	56E06447S01	Tray, Packing (R)
103	56E06448S01	Tray, Packing (L)
■ 104	56E06449S01	Carton, Packing (IND)
● 104	56E07330S01	Carton, Packing (IND)
105	56E06450S01	Sack, Polyethylene
106	01E06394S01	Assy., Kit Instal
■ 106-1	03E06399S01	Screw, Tapping (M4 × 14)
■ 106-2	65S58596F05	Auto, Fuse 15A
107	01E06395S01	Assy., Kit Output Wire (S.T)
108	01E06396S01	Assy., Kit Output Wire
109	01E06397S01	Assy., Kit Power Wire

NOTE: ■: For North American model only.
●: For General Foreign model only.
Others: Common.